Ref 21

REFERENCE # 21
SITE NAME Bennitt Landfill
SITE ID ILD980680045

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

M E M O R A N D U M

DATE: September 26, 1985
TO: File
FROM: Gregory Smith, M.S., P.E., Hydrogeologist G.T.S.
SUBJECT: Illinois/R5-8303-1D/IL0062
Rockdale/Bennitt Landfill/ILD980680045
Evaluation of Hydrogeology in the Vicinity
of the Bennitt Landfill with Respect to
Aquifer Continuity and Hydraulic Connections

This memo is based on a review of the report by Willman (1971), a representative sampling of well logs obtained through the Illinois Water Survey and the topographic maps of the area. The site is found on the north side of the Des Plaines River valley through which also flows the Illinois and Michigan Canal.

The stratigraphic units of interest for the purpose of this memo are the Silurian dolomite bedrock, overlain by arealy discontinuous basal sand and gravels which is in turn covered with a glacial till which would correspond to the ground moraine described by Willman (1971). In addition, there is a lacustrine clay in the area that is not differentiated on the drillers logs.

The areal (and vertical) continuity of the lacustrine clay and ground moraine has been altered mainly through erosional processes. The representative set of well logs shows a maximum thickness of 55 ft. for the unconsolidated deposits which are found in Section 19 Township 35, North Range 10 East. This would closely represent conditions on site. To the north, away from the river valley, the sediments become thicker.

It is expected that the glacial and glacio-lacustrine deposits have been eroded away in vicinity of the Des Plaines River and its flood plain. This has been replaced with sediments derived by the river and their deposition has been modified by man.

The basal sands and gravels and the silurian dolomite aquifer are hydrologically continuous and are recharged directly by seepage through precipitation (Willman, 1971).

The Illinois and Michigan Canal and the Des Plaines River attain maximum depths in this area of 6 and 15 ft. respectively. This in no way dissects the Silurian aquifer and therefore cannot be considered a discontinuity in it. However, this being an area of groundwater discharge, migration of a shallow contaminant plume across it seems unlikely.

References:

Illinois State Water Survey - Selection of representative well logs as selected by Paul C. Jahn, Hydrology Assistant, Groundwater Section

U.S.G.S Topographic Maps - Joliet Quad 1976
Elwood Quad 1976
Plainfield Quad 1976
Channaban Quad 1976

Willman, H.B. (1971) Summary of the Geology of the Chicago Area
Illinois State Geological Survey
Urbana, IL 61801

41S:5X